



# ENDANGERED SPECIES HABITAT ASSESSMENT & SURVEY GUIDELINES: PLANTS

(dated 3/1/2006)

## PURPOSE

The Natural Heritage and Endangered Species Program (NHESP) may request that the project proponent conduct an Endangered Species Habitat Assessment & Survey for imperiled plants. This will be used to help the NHESP:

1. determine whether or not a proposed project will result in a "take" of imperiled state-listed rare species (MA Endangered Species Regulations, 321 CMR 10.00);
2. evaluate the level of impact to imperiled species habitat during the Conservation and Management Permit application process (321 CMR 10.04(3)(b));
3. identify approaches to avoiding or minimizing project-related impacts to imperiled state-listed species and their habitats.

## IN ADVANCE OF THE ASSESSMENT AND SURVEY

- The assessment and survey must address all *state-listed species identified by the NHESP*.
- *The NHESP MUST pre-approve the candidate botanist who can demonstrate adequate field experience before survey work begins.* The ability to locate and identify state-listed plant species and their habitat(s) is required for an adequate botanical survey.
- The botanical survey must *describe the entire project site*, not just the portion of the project site within the proposed project "footprint."
- The *methods and timing of survey for each imperiled plant must be pre-approved by the NHESP*.
  - Literature review/background research will identify the readily identifiable time period(s) and habitat(s) for the target species. Generally, the weeks/months of flowering and fruiting are the best. For some species, vegetative features or time of day can be useful.
  - Detailed phenological information can be viewed from herbarium specimens at University of Massachusetts-Amherst as well as from botanical references and scientific literature.
- If a botanist believes that specimens of a state-listed species must be collected for confirmation or vouchering, a "Scientific Collection Permit" will be required. Generally, collecting will not be required and field photographs will suffice for verification of identification. For additional details, please refer to the Guidelines for Rare Plant Collection in Massachusetts (rev. April 2005).

## REPORTING REQUIREMENTS

1. Narrative report addressing all elements including summarization of methods.
2. Photographic and mapping requirements including locations of all state-listed plants found.
3. List of botanical references, herbaria, experts, and any other resources used for identifications or during surveys.
4. Other items specifically requested by the NHESP.
5. Rare plant observation forms for all state-listed plants.
6. Copies of the assessment report
  - If you observe a state-listed species: 2 paper + 1 copy on CD
  - If you do not observe a state-listed species: 1 paper + 1 copy on CD

### Mail Report To:

Regulatory Review  
Natural Heritage &  
Endangered Species Program  
Route 135, North Drive  
Westborough, MA 01581

## REQUIRED KEY ELEMENTS SURVEY: PLANTS

### COVER TYPE MAP

Upland and wetland portions of the project site should be subdivided into land-use/land-cover types based upon dominant vegetation and existing development.

- Hydrology of wetlands and ponds should be described, as should the hydroperiod of vernal pools. The DEP Wetlands Classification (MassGIS DEP Wetlands coverage) or the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al.).
- Upland areas should be classified into similar coarse cover types (e.g., northern hardwoods, central hardwoods, conifers, mixed forest, shrubland, grassland/meadow, etc...).
- Some portions of the site may have habitat functions for multiple rare species and should be mapped accordingly and overlaid on an ortho-photo of the project site (e.g., 2001 MassGIS color orthos) with an indication of the scale.

### EXISTING CONDITIONS

- *Description of cover types* - Descriptions of dominant vegetation within each cover type, amount of each cover type, description of other important site features such as existing developed or disturbed areas (e.g., paved roads, gravel pits, areas of recent forest clearing).
- Detailed observation notes with representative list of vascular plants. The general vascular plant vegetation and general habitat conditions should be described as outlined in the "Classification of the Natural Communities of Massachusetts" (Swain & Kearsely 2001).
- *Representative Photographs* - Representative photographs must be provided representative habitat patch for target species. Please indicate the photograph location and include the cardinal direction of view (e.g. photo #1; looking northeast) or an arrow on a map of the site map.

### FIELD SURVEYS: PLANTS

- Surveys must thoroughly search all suitable habitat(s) during the appropriate season, when the plant(s) is most readily detectable and identifiable, on the entire subject property.
- Sampling via plots, line or belt transects or similar methods are not acceptable when conducting the rare plant search. All habitat(s) must be thoroughly searched.
- At the discretion of the NHESP, *multiple visits* may be necessary for larger properties, certain plant species, and throughout the time period where the target plant is most detectable.
- When a target plant is encountered - transects, plots or similar sampling methods are acceptable to quantify, geo-reference, and map the extent of the population size and density.
  - If rare plants are observed beyond the property, then it is strongly recommended these observations are included in order to better evaluate landscape context of proposed impacts.
  - Representative photographs of each target plant and those easily confused with the target plant should be labeled and submitted.

### IMPACT ANALYSIS

*If imperiled plants are present*, then this section should include quantification of the impacts of the proposed project to plant's habitat. For example, what proportion of the plant stems observed will be altered by the proposed project or will the project result in alterations to hydrology or water quality within state-listed species habitat?

Potential impacts should be thoroughly evaluated and discussed. In addition, recommendations should be provided for protective measures and design changes that avoid and/or minimize project impacts to state-listed species and their habitats, and mitigate such impacts.

If any species is also listed pursuant to the U.S. Endangered Species Act (16 U.S.C.A. §§ 1531-1544), this section must reference and include guidance from the Recovery Plan.

**If any state listed rare species are observed, a Rare Animal or Plant Observation Form must be submitted to the NHESP within 45 days of the observation.**